

WHAT IS CLAIMED IS:

1. A system for performing experiments, in particular for high throughput experimentation, said system comprising:

- at least one tubular vessel having a first vessel opening and a second vessel opening at opposite ends thereof allowing a flow of fluid through said vessel,
- an assembly for housing said vessel, said assembly comprising:
 - a base block having at least one first channel formed therein for removably housing the vessel, said first channel having a wall, a first channel opening, opening in a first face of the base block, and a second channel opening, opening in a second face of the base block, said first and second channel openings allowing introduction and/or discharge of a fluid into and from said first channel,
 - a cover element having a bottom surface, the cover element with the bottom surface facing the base block being releasably attachable to the first face of the base block;
 - a first sealing element between the first face of the base block and the bottom surface of the cover element, the first sealing element surrounding the first channel opening completely, and thereby sealing gastight around said first channel opening between the cover element and the base block;

in which system the tubular vessel and the first channel are such that an annular gap is present between the outside of the vessel and the wall of the first channel;

and in which system a second sealing element is located in the first channel, said second sealing element sealing gastight against the wall of the first channel and the outside of the vessel thereby sealing said annular gap;

and in which system a fourth channel is provided in the base block, which fourth channel opens into the gap between the second sealing element and the second channel opening.

2. A system according to claim 1, wherein said gap is between 0.01 and 1 millimetres.
3. A system according to claim 1, wherein the second sealing element is located in the vicinity of the first face of the base block.
4. A system according to claim 1, wherein the base block comprises a second channel connecting to the first channel between the second sealing element and the first channel opening.
5. A system according to claim 1, wherein the cover element comprises a third channel in fluid communication with the at least one first channel in the base block.
6. A system according to claim 1, wherein the vessel contains a reaction zone.
7. A system according to claim 1, wherein heat exchange means are provided for controlling the temperature of a part of the vessel.
8. A system according to claim 1, wherein said base block has multiple first channels each housing a tubular vessel.
9. A system according to claim 1, wherein said base block has multiple first channels each housing a tubular vessel, and wherein a single cover element covers the first face of the base block and thereby the first channel openings of all first channels.
10. A system according to claim 1, wherein the system comprises a means for feeding a fluid via said fourth channel into the gap.

11. A system according to claim 1, wherein the first face of the base block is opposite from the second face, and wherein the second channel opening is formed by an extension channel, extending coaxial in line with said first channel and opening into said second face.

12. A system according to claim 1, wherein the cover element comprises a third channel, in fluid communication with the at least one first channel in the base block, and wherein a first fluid conduit extends through said third channel and is in communication with said first channel opening.

13. A system according to claim 1, wherein the first face of the base block is opposite from the second face, and wherein the second channel opening is formed by an extension channel, extending coaxial in line with said first channel and opening into said second face, and wherein a second fluid conduit extends through said extension channel and is in communication with said second channel opening.

14. A method for performing experiments wherein use is made of a system for performing experiments, in particular for high throughput experimentation, said system comprising:

- at least one tubular vessel having a first vessel opening and a second vessel opening at opposite ends thereof allowing a flow of fluid through said vessel,
- an assembly for housing said vessel, said assembly comprising:
 - a base block having at least one first channel formed therein for removably housing the vessel, said first channel having a wall, a first channel opening, opening in a first face of the base block, and a second channel opening, opening in a second face of the base block, said first and second channel openings allowing introduction and/or discharge of a fluid into and from said first channel,

- a cover element having a bottom surface, the cover element with the bottom surface facing the base block being releasably attachable to the first face of the base block;
- a first sealing element between the first face of the base block and the bottom surface of the cover element, the first sealing element surrounding the first channel opening completely, and thereby sealing gastight around said first channel opening between the cover element and the base block;

in which system the tubular vessel and the first channel are such that an annular gap is present between the outside of the vessel and the wall of the first channel;

and in which system a second sealing element is located in the first channel, said second sealing element sealing gastight against the wall of the first channel and the outside of the vessel thereby sealing said annular gap;

and in which system a fourth channel is provided in the base block, which fourth channel opens into the gap between the second sealing element and the second channel opening.

15. A method according to claim 14, wherein a purging fluid is fed through said fourth channel before an experimentation fluid is allowed to flow through said vessel.

16. A method according to claim 14, wherein an experimentation fluid is introduced into the vessel via the first opening thereof and a reaction product is discharged from said second opening of the vessel and wherein a diluting fluid for diluting the reaction product is fed through said fourth channel.